

Sub 32  
breaking said quenched lump alloy into particles,  
classifying said quenched lump alloy particles by  
size to obtain a range of particles having a grain diameter  
suitable for forming a fixed bed catalyst,

activating said quenched lump alloy or said  
quenched lump alloy particles to form a Raney catalyst.

A2 Sub 33  
6. The [lump Raney] catalyst defined in claim 5,  
wherein said classified particles have a grain  
diameter of approximately 2-4 mm.

7. The [lump Raney] catalyst defined in claim 5,  
wherein said mixture consists essentially of  
nickel and aluminum.

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8. The [lump Raney] catalyst as defined in claim 7  
wherein said nickel and said aluminum are present  
in an amount in a range of 1:2 to 2:1 by weight.

9. A powder Raney catalyst for a fixed bed  
catalyst made from the lump Raney catalyst defined in claim 5  
further comprising after said activating step  
crushing said Raney catalyst to form a powder.

10. A powder Raney catalyst for a fixed bed  
catalyst made from the lump Raney catalyst defined in claim 7  
further comprising after said activating step

crushing said Raney catalyst to form a powder.

11. A process for producing a lump Raney catalyst  
for a fixed bed catalyst as defined in claim 5 comprising  
melting a mixture of nickel and aluminum,

quenching droplets of said mixture of nickel and aluminum to form a quenched lump alloy,

breaking said quenched lump alloy into particles, classifying said quenched lump alloy particles by size to obtain a range of particles having a grain diameter suitable for forming a fixed bed catalyst,

activating said quenched lump alloy made before said classifying step or activating said quenched lump alloy particles to form a Raney catalyst.

12. A process for producing a lump Raney catalyst for a fixed bed catalyst as defined in claim (6) <sup>(cancel in amendment D) (4/16)</sup> comprising

melting a mixture consisting essentially of nickel and aluminum,

quenching droplets of said mixture of nickel and aluminum to form a quenched lump alloy,

breaking said quenched lump alloy into particles, classifying said quenched lump alloy particles to obtain a range of particles having a grain diameter of approximately 2-4 mm,

activating said quenched lump alloy made before said classifying step or activating said quenched lump alloy particles to form a Raney catalyst.

13. A process for producing a lump Raney catalyst for a fixed bed catalyst as defined in claim (7) <sup>(cancel, (C), amendment)</sup> comprising

melting a mixture consisting essentially of nickel and aluminum,

quenching droplets of said mixture of nickel and aluminum to form a quenched lump alloy,

breaking said quenched lump alloy into particles, classifying said quenched lump alloy particles to obtain a range of particles having a grain diameter suitable for forming a fixed bed catalyst,

activating said quenched lump alloy made before said classifying step or activating said quenched lump alloy particles to form a Raney catalyst.

14. A process for producing a powder Raney catalyst for a fixed bed catalyst comprising the process defined in claim 13 further comprising

crushing said Raney catalyst form a powder.

15. A process for producing a powder Raney catalyst for a fixed bed catalyst comprising the process defined in claim 11 further comprising

crushing said Raney catalyst form a powder.

16. A process for reactivating a deactivated Raney catalyst comprising

deactivating the lump Raney catalyst defined in claim 5 to form a deactivated Raney catalyst,

eluting aluminum on a surface of said deactivated Raney catalyst with an alkali to form said lump Raney catalyst.

17. A process for reactivating a deactivated Raney catalyst comprising